

Title (en)  
Non-linear resistor

Title (de)  
Nicht-linearer Widerstand

Title (fr)  
Résistance non-linéaire

Publication  
**EP 0961300 A2 19991201 (EN)**

Application  
**EP 99109237 A 19990525**

Priority  
JP 14350598 A 19980525

Abstract (en)  
A sintered body which can be formed into a resistor having a non-linear resistance includes zinc oxide as the principal composition and bismuth, cobalt, antimony, manganese and nickel respectively convened to expressed Bi<sub>2</sub>O<sub>3</sub>, Co<sub>2</sub>O<sub>3</sub>, Sb<sub>2</sub>O<sub>3</sub>, MnO and NiO as auxiliary compositions. The compositions contains 0.05 to 10 mol% of Bi<sub>2</sub>O<sub>3</sub>, 0.05 to 10 mol% of Co<sub>2</sub>O<sub>3</sub>, 0.05 to 10 mol% of Sb<sub>2</sub>O<sub>3</sub>, 0.05 to 10 mol% of MnO and 0.05 to 10 mol% of NiO; the content ratio of the Bi<sub>2</sub>O<sub>3</sub> to the NiO is in a mole ratio of 0.5 or more but 1.5 or less, and the content ratio of the MnO to the Sb<sub>2</sub>O<sub>3</sub> is in a mole ratio of 1.0 or less. Preferably, the composition contains at least one of 0.5 to 500 ppm of aluminum, convened to Al<sup>3+</sup>, and 10 to 1000 ppm of at least one or the other of boron and silver, convened respectively to B<sup>3+</sup>, and Ag<sup>+</sup>. The composition may also contain 0.01 to 1000 ppm of at least one of sodium, potassium, chlorine and calcium, convened respectively to Na<sup>+</sup>, K<sup>+</sup>, Cl<sup>-</sup> and Ca<sup>2+</sup>.

IPC 1-7  
**H01C 7/12**

IPC 8 full level  
**H01C 7/12** (2006.01); **H01C 7/12** (2006.01)

CPC (source: EP US)  
**H01C 7/12** (2013.01 - EP US)

Cited by  
US11170917B1; EP2144256A1; EP2367178A4; EP2194541A3; EP2124233A4; US8535575B2; US11501900B2; EP2305622A1; US8562859B2; US11031159B2; EP2194541B1

Designated contracting state (EPC)  
DE FR SE

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